The Examiner also rejected Claims 4, 5, 7 and 8 under the judicially created doctrine of obviousness-type double patenting over all claims of U.S. Patent No. 6,242,980 to Tsukagoshi et al. ("the Tsukagoshi Patent") in view of the Leonowich Patent.

First, with respect to the rejections to Claims 4, 5, 7 and 8 under 35 U.S.C. § 103(a), Applicants agree with the Examiner that the Leonowich Patent fails to describe the specifics of the differential amplifier as claimed. There is no teaching to modify or replace the differential amplifier of Leonowich. There is no teaching of a need to lower power consumption for the oscillator or that the comparator of Leonowich causes too much power consumption. Further, Leonowich does not disclose combining differential amplification outputs as recited in Claim 7 or an output buffer as recited in Claim 8. The combination of an oscillator and the Tomatsu differential amplifier circuits is not obvious from Tomatsu. Tomatsu discloses an operational amplifier for driving a low impedance load having an input stage with a folded cascode type differential amplifier and prebuffers with differential amplifiers. In contrast, the claims recite an oscillator combined with differential amplifiers or the specific circuitry forming differential amplifiers. Applicants traverse the Examiner's determination that Tomatsu discloses the specific differential amplifier circuitry that is claimed. In Claims 7 and 8, the first transistor receives the first signal from the oscillator at the gate, unlike Q26 in Tomatsu, which is connected to another MOSFET. Also, in Claims 7 and 8, the second transistor receives the second signal from the oscillator at the gate, unlike Q27 in Tomatsu, which is connected to another MOSFET.

Further, the Office Action states that it would have been obvious to one of ordinary skill in the art at the time the invention was made to replace the differential amplifier of Leonowich with that of Tomatsu so as to lower power consumption and provide for a small characteristic dispersion both as taught by Tomatsu. The present invention is directed to eliminating the problem of fluctuations in the operating point potential of the output signal of the differential amplifier circuit. The present invention is not concerned with lowering power consumption for driving a low impedance load.

Referring to FIG. 1 of the present application, the output signal at the output of the CMOS inverter X1 has an oscillating component riding on an operating point potential. The operating point potential can fluctuate due to, for example, factors relating to semiconductor manufacturing processes, or to fluctuation of power supply potentials V_{DD} and V_{SS} caused by the oscillation at the output of the inverter. The fluctuations in the operating point potential affect, in turn, the duty ratio of the alternating signal at the output of the CMOS inverter. Inasmuch as the CMOS inverter X2 has a predetermined threshold, fluctuations in the duty ratio of the output signal of the CMOS inverter X1 caused by fluctuations in the operating point potential of the output signal make it difficult to maintain a predetermined duty ratio for the output signal from the CMOS inverter X2. The present invention is directed to eliminating these problems to output a signal where the duty ratio is unchanged from that of first and second signals from an oscillator and the operating point of the output signal is at an intermediate point between the power supply potentials regardless of the operating point of the signals from the oscillator and fluctuation in the operating points. Tomatsu is not

directed to solving the problem of operating point fluctuations during amplification of oscillating signals or to the problems that fluctuations cause in the duty ratio. The rejection is based upon picking and choosing just parts of the Tomatsu operational amplifier (prebuffer stages 2a and 2b) and combining them with the oscillator of Leonowich using impermissible hindsight of Applicants' invention. Thus, Claims 7 and 8 are not met by Leonowich or Tomatsu, taken alone or considered in combination.

Claims 4 and 5 are dependent on Claim 8, and therefore, contain all the limitations of that claim. Thus, Claims 4 and 5 are patentable for the reasons set forth with respect to Claim 8. Since the Leonowich and Tomatsu Patents do not render Claims 4, 5, 7 and 8 unpatentable alone or in combination or incombination with the other prior art of record, Applicants respectfully submit that the rejections thereof be withdrawn by the Examiner.

With respect to the rejections to Claims 4, 5, 7 and 8 based upon the judicially created doctrine of obviousness-type double patenting over all claims of the Tsukagoshi Patent in view of the Leonowich Patent, Applicants respectfully submit the enclosed Terminal Disclaimer. Nippon Precision Circuits Inc. is the current owner of the present application as well as the owner of the parent U.S. Patent No. 6,242,980 B1, of the present application. The assignment of the '980 patent was recorded on 01-22-1999 at Reel No. 9728 and Frame No. 0485.

Applicants respectfully submit that this application is in condition for allowance and request that a timely Notice of Allowance be issued in this case.

Respectfully submitted,

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